	AGENDA	**Concrete Products Task Group Meeting (CT-Industry)** **July 10, 2014** **Time 10:00 AM to 12:00 PM** **Room 514 – Translab – OSM Annex Building** **5900 Folsom Blvd.** **Sacramento, CA 95814**	
Time	**Topic**	**Presented By**	**Purpose/Endstate**
1000 – 1005	Welcome, Attendance and Agenda Review	All Co-Chairs	Meeting Begins
1005 – 1015	Review of Last Meeting's Action Items	All Co-Chairs	Establish/Close-Out Due-Outs
1015 – 1020	Housekeeping Items – The following are to be discussed: • Current Print-Out Package • OSM Task Group Website • 2014 Calendar	Bobby Petska	Ensure all members are postured for success
1020 – 1040	"State of the Industry" Update Brief	Industry Co-Chairs	Ensure key concerns from Industry are heard
Sub-Task Group co-chairs provide update on • Progress Reports • Review of Issues, including level of effort and updates to scoping documents • Discuss any recommendations for changes in priorities • Discuss and/or approve new scoping documents			
1040 – 1100	CIP Pavement Sub-Task Group	Cornelis Hakim/Bruce Carter	STG Co-Chairs provide update on decisions made/concerns for each activity
1100 – 1120	Precast Sub-Task Group	Keith Hoffman/Cliff Ohlwiler	STG Co-Chairs provide update on decisions made/concerns for each activity
1120 – 1140	Materials/QA Sub-Task Group	Keith Hoffman/Mark Hill	STG Co-Chairs provide update on decisions made/concerns for each activity
1140 – 1200	Round Table Discussion, Discussion of Issues, Questions and Action items, including the following: • Innocuous Aggregate Authorized Materials List • Bin List for FY 14-15	All	Document due-outs and decisions made

Concrete Products Meeting Action Item Review

Below is the brief summary and status of action items from the previous TG meetings:

Action Items from 4/10/14 meeting	**Due Date**	**Responsible Person**	**Status**
Garner information on CT charging practices for non-project specific materials tests, and relay this information in support of the Annual Aggregate Source Testing effort	10 Jul 2014	Chuck Suszko/Ken Darby	Pending
Distribute the Excel Raw Data for the Annual Aggregate Source Testing survey to Construction	17 Apr 2014	Bobby Petska	Complete
Industry to request a meeting regarding Non-Project Specific materials testing charging practices with pertinent CT personnel	10 Jul 2014	Craig Hennings/Charley Rea	Pending
Update the Attendance Log to reflect updated TG Member information	10 Jul 2014	Bobby Petska	Complete
Begin posting STG Meeting Minutes onto the TG Website	10 Jul 2014	Bobby Petska	Complete
Conduct Final Review of CoTE Report from CIP Pavement STG	30 Apr 2014	All TG Members	Pending
Create a final draft of the "Flexural Strength Testing" Scoping Document by 15 April, prior to the RPC Quarterly Meeting	15 Apr 2014	Chuck Suszko, Ken Darby, Cornelis Hakim, Kirk McDonald, Craig Hennings	Complete
Create a Dispute Resolution Document for the "Precast Pavement" specification to outline the outstanding issues related to this activity, and send to the TG	5 May 2014	Keith Hoffman, Cliff Ohlwiler	Complete
Distribute the "QCQA" Interim Lessons Learned report to the Industry Members of the TG.	10 Jul 2014	Keith Hoffman/Bobby Petska	Complete
Provide an update on when the MPQP Document would be updated to include the new recycled	30 April 2014	Chuck Suszko/Ken Darby	Pending

concrete language			
Distribute relevant information regarding Southern California project Rapid Strength Concrete SSP/Shrinkage testing for future discussion	10 Jul 2014	Mark Hill/Cornelis Hakim	Pending

Action Items from 1/9/14 meeting	**Due Date**	**Responsible Person**	**Status**
Review and provide comments to the current version of the Task Group Operating Principles, and adopt at next Concrete Task Group Meeting	24 Feb 2014	All TG Members	Adopted

Action Items from 10/10/13 meeting	**Due Date**	**Responsible Person**	**Status**
Provide examples of Mix Designs or Project EA information with aggregate test result discrepancies or concerns	16 Oct 2013	Craig Hennings	Pending
Conduct follow-on discussion regarding Mix Designs or Project EA information with aggregate test result discrepancies or concerns	30 Nov 2013	Bobby Petska/Dan Speer/Keith Hoffman	Pending Mix Designs from Industry

Concrete Products TG Quarterly Meeting Attendance Log as of 10 July 2014

Member	Role	TG Meeting (CT and Industry)													
		4/14/2011	7/14/2011	10/13/2011	1/26/2012	4/12/2012	7/12/2012	10/11/2012	1/10/2013	4/11/2013	7/11/2013	10/10/2013	1/9/2014	4/10/2014	7/10/2014
Dan Speer	Caltrans Co-Chair	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Chuck Suszko	Caltrans Construction	✗	✓	✓			✗	✗	✓	✓	✓	✗	✓		
Amy Fong	Caltrans Pavement Program	✗	✗	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓		
Bill Farnbach	Caltrans Pavement Program														
Roberto Lacalle	Caltrans Struct. Specs & Estmt.	✓	p	✓											
Marcelo Peinado	Caltrans District -11 Engineering	✓	✗	✗											
Dennis Agar	Caltrans District -10 Engineering	✓	✓	✓											
Jeremy Peterson-Self	Co-Chair, Precast Concrete STG						✓	✓	✓	✓					
Keith Hoffman	Co-Chair, Materials/QA & Precast STG	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Cornelis Hakim	Co-Chair, Cast In Place Concrete Pavement STG	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mehdi Parvini	Co-Chair, Cast In Place Concrete Pavement STG	✓	✓	✓	✓	✓	✓	✓	✓	✓					
Jinesh Mehta/Bobby Petska	Caltrans, Structural Materials Rep. (note taker)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Charley Rea	Industry Co-Chair-CALCIMA	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Kirk McDonald	Industry Co-Chair														
Bruce Carter	Industry Co-Chair	✓	✓	✓	✓										
Ron Stickel	Industry Co-Chair					✓	✓	✓	✓	✓	✓	✓	✓	✗	
Cliff Ohlwiler	Industry, Co-Chair, Precast Concrete STG	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Tom Tietz	Industry, CNCA	✗	✗	✓	✓										
Mark Hill	Industry, Syar					✓	✓	✓	✓	✓	✓	✓	✓	✓	
Bruce Carter	Industry, CIP Pavement STG Co-Chair														
Craig Hennings	Industry, ACPA-SW	✗	✗	✗	✗	✓	✗	✗	✗	✗	✓	✓	✗	✓	

Legend:

- ✓ **Present**
- ✗ **Absent**
- p **Pre-designated proxy**

STATE OF CALIFORNIA
PAVEMENT PROGRAM STATUS CALENDAR

DEPARTMENT OF TRANSPORTATION

ROCK PRODUCTS
COMMITTEE MEETINGS
CALENDAR

2014

JAN

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

FEB

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

MAR

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

APR

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

MAY

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

JUN

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

JUL

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

AUG

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

SEPT

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

OCT

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

NOV

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

DEC

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Calendar Legend

- Quarterly Rock Products Committee (RPC) Meeting
- Concrete Task Group 3+2 Meetings (1:30pm - 2:30pm)
- State Holidays
- Concrete Materials & QA STG Meeting (1:00 – 4:30 pm) - CT only
- Concrete Materials & QA STG Meeting (1:00 – 4:30 pm) - All
- Precast Subtask Group Meeting (9:00 – 11:30 am) - All
- Precast Concrete Subtask Group Meeting (9:00 – 11:30 am) - CT only
- Concrete Products Task Group Meeting Meeting (10:00-12:00)- All
- Concrete Task Group CT Only Meeting Meeting (1:00-3:00 pm)-CT only
- Cast In Place Pavement Subtask Group Meeting (9:00am – 11:00am)-All
- Cast In Place Pavement Subtask Group Meeting (9:00am – 11:00am)-CT Only

Updated 11/27/13

Concrete Materials & QA Sub-Task Group: Issue Status Summary, July 2014					
Project Priority	**Project**	**Purpose**	**Overall Progress**	**Target Completion Date**	**% Complete**
1	Structural Concrete QC/QA Specification Development	Implement performance-based specifications for materials management of structural concrete.	Additional outreach with other pilot projects and Industry to take place. Coordination to continue for scheduling of ACI trainings and Pre-Bid Outreach meetings for Pilot Projects both in Northern CA and Southern CA. Continue conducting pre-bid meetings. Use gathered feedback from beta testing of DIME to update and roll out for larger use. Finalize QA guidance report to generate corresponding bulletins for state staff. Amendment to IA manual upcoming, develop long term IA processes. Discuss project lists. Discuss communications with Districts and Contractors (Outreach).	6/30/2014	85%
2	Update Construction Manual	Update Construction Manual to conform to changes made to Sections 6, 9, 11, 40, 49, 51, 53, 72, 73, 83, and 90 of the 2010 Standard Specifications.	Review of draft subsections taking place. Progress to continue in coming days. Section 2, Section 3 subsections 0-3, Section 4 subsections 16, 19, 22, 24-29, 41, 42, 49-57, 59, 61-70, 72-75, 80-86, 91, 94, 95, Section 5 subsections 0, 5, Section 8 subsection 2, and Section 9 are closed for review. Subject matter experts creating workplans and drafts for remaining Section 3, 4, 5, and 8 subsections and Section 6 and 7.	12/31/2012	100%
3	Recycled Concrete	Evaluate possibilities for use of recycled (hardened and plastic) concrete	Monthly project team meetings to continue. Next scheduled meeting is on July 10, 2014. Internal meeting regarding the Specification changes is scheduled for May 16, 2014. Discuss the Section 90 changes related to cement backfill material specification language with the Spec Owners. The carbon footprint savings report was received by project team on June 21, 2013. Draft Specs to be complete in coming weeks.	7/31/2014	90%
4	Shotcrete Specification Updates	Update the provisions in Section 53 to clarify such factors as SCM content, testing requirements, etc.	Scoping document approved.	4/1/2015	N/A
5	Flexural Beam Testing in accordance with ASTM (Joint Activity with CIP Pavement STG)	Industry requesting update of ASTM/CTM requirements related to Flexural Test specimen curing, testing, etc.	Scoping document approved.	6/30/2015	N/A
Bin List Items	Green Concrete/ASR/Limestone Spec Updates in Section 90	Update the provisions in Section 90 to ensure that CO2 reduction goals are captured but independent of ASR Reduction goals	Activity to be developed in conjunction with "ASR Research Problem Statement". Research from ASTM Limestone Cement updates may be incorporated into this activity.	TBD	N/A
	Smog-Eating Concrete	Develop specifications and design guidelines for the use	This item is currently under evaluation. A pilot project is to be selected in the near future, with the goal of capturing lessons learned. A meeting with Caltrans and Lehigh personnel took place on 30 August 2012.	TBD	N/A
	Evaluate shrinkage specification for concrete	Review SE/CV charateristics and then effect on shrinkage performance and evaluate shrinkage control needs for CT concrete	Draft scoping document in process; discussion underway at project team level; timeline and necessary deliverables to be clarified in coming months.	TBD	N/A
	Performance-Based Specifications for concrete	With the latest advances in concrete technology and availability of new tests. move towards performance specifications	Using surface resistivity and other performance criteria refine the specifications from prescriptive to performance	TBD	N/A
	PT Grout Specification	Pre-approved list for grout products and updated specfication is needed	STG is working on developing a pre-approved list for grouts with succesful history on projects. Minimal Resources anticipated; working in conjunction with DES Prestress Committee and Precast Design Committee.	TBD	N/A
	Separate out ASR requirements from green concrete related spec in section 90	Update the provisions in Section 90 to ensure that CO2 reduction goals are captured but independent of ASR Reduction goals	To be developed in conjunction with "ASR Pavement TAP research". Research from ASTM Limestone Cement updates may be incorporated into this activity.	TBD	N/A
	Cubic Yardage Concrete and Aggregate Deduction	Update the provisions in Section 90 to better ensure compliance with Specifications	Discussion underway at STG level; timeline and necessary deliverables to be clarified.	TBD	N/A
	Fiber Reinforced Concrete Specification	Develop specifications and design guidelines for the use	Discussion underway at STG level; timeline and necessary deliverables to be clarified	TBD	N/A

Structural Concrete QC/QA Specification Development

Sub Task Group (STG): Materials & QA **Priority: 1**

STG Co-Chair: Keith Hoffman **Project Team Lead: John Lammers**

Project Team Members: Cathrina Barros, Ruth Fernandes, Austin Perez, Craig Knapp, Mike Cook, Rosme Aguilar, The' Pham, Deepak Maskey, Al Ochoa, Rick Navarro, (CCTIA)

Project Team Advisors: Rita Leahy, Jinesh Mehta, Ken Beede

DEADLINE: 6/30/2013 **PERCENT COMPLETE: 85%**

OBJECTIVES:
Implement quality control sampling and testing for structural concrete as directed in the decision document signed by the Chief Engineer and Deputy Director of Maintenance and Operations in December 2010. Determine appropriate QC sampling and testing standards as well as acceptance (QA) sampling and testing guidance consistent with federal regulations. These requirements and guidance should be implementable for any project regardless of procurement methods.

ANTICIPATED SPEC-WRITER INVOLVEMENT:
QCQA specification forecasted to be rolled out to all new projects by end of 2014. Continuous efforts to include Prebid Outreach meeting and Section 11-4 language in all Pilot Project Specifications.

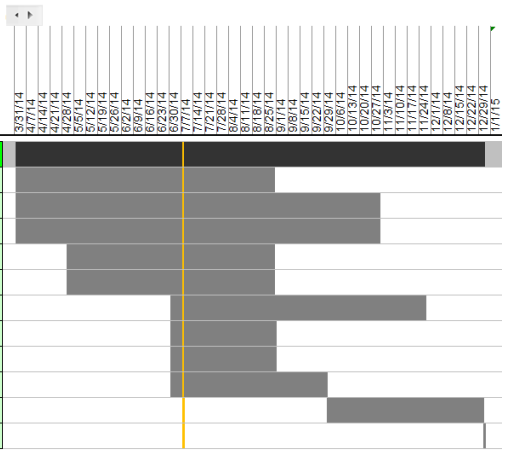
RECENT ACTIVITIES:
- Sample ID/Test ID Spec change language – Complete
- ACI Training Roster– 7/7 classes of FY 13/14 contract completed. FY 14/15 proposed training list submitted to DPAC for approval; training contract includes three 20-person classes in Northern CA and four 20-person classes in Southern CA.
- Full listings of all Pilot Projects are currently tracked and are continuously updated as needed.
- Coordination of Pre-Bid Outreach Meetings for upcoming Pilot Projects continues:
    - D03 Pilot Project ongoing.
    - D04 Pilot Project – NAP-29 Troutdale Creek Bridge – Pre-Bid Outreach language for inclusion in specifications and date for presentation currently under coordination.
    - D04 Pilot Project – San Francisquito- Contract has not been awarded yet. Pre-Bid Outreach occurred on December 11th in Oakland Main Auditorium.
    - D06 Pilot Project – Project ongoing. Pre Concrete meeting and DIME Training have taken place over the past months.
    - D07 Pilot Project removed from Pilot Project list as Prebid outreach meeting and Section 11-4 language was not included in specifications.
    - D08 Pilot Project – Project ongoing. Approximately 40 QC Tests have been input into DIME.
    - D11 Pilot Project – Project ongoing. Approximately 10 QC Tests have been input.
- QA Guidance Doc Development –continues to be refined. METS currently working with OSC on this assignment. Updates being made to document include FAQ section, DIME instructions, sample QC meeting agenda, QC checklist and sample QC Plan.

UPCOMING ACTIVITIES:
- Additional outreach with other pilot projects and Industry to take place.
- Coordination to continue for scheduling of ACI trainings and Pre-Bid Outreach meetings for Pilot Projects both in Northern CA and Southern CA.
- Continue conducting pre-bid meetings.
- Use gathered feedback from beta testing of DIME to update and roll out for larger use.
- Finalize QA guidance report to generate corresponding bulletins for state staff.
- Amendment to IA manual upcoming, develop long term IA processes.
- Discuss project lists. Discuss communications with Districts and Contractors (Outreach).

Project: RPC QC/QA Implementation Plan

Schedule as of: 7/8/2014

Tasks		Start	End	Duration (Days)	Days Complete
Update QC/QA Specification	Lead	4/01/14	1/02/15	276	36%
Propose updated language for the Independent Assurance Manual	IA/OSM	4/01/14	8/31/14	152	65%
Develop and finalize QC/QA Guidance Document	OSC	4/01/14	11/01/14	214	46%
Reduction of Verification Testing Frequency specification resolution	Project Team	4/01/14	11/01/14	214	46%
IA Program lead conductor of certification training/testing for CTMs	IA	5/01/14	8/31/14	122	56%
IA Program Certification per new CTMs	IA	5/01/14	8/31/14	122	56%
Update CTMs to reference the ASTMs in the QC/QA Spec	OSM	7/01/14	11/28/14	150	5%
Develop more specific DIME Familiarization Training	OSM	7/01/14	9/01/14	62	12%
Division of Construction Bulletin	Construction	7/01/14	9/01/14	62	12%
Develop Draft Updates to QC/QA Specification	SP&I	7/01/14	10/01/14	92	8%
Route Updated Specification for Approval	SP&I	10/01/14	1/01/15	92	0%
Full QC/QA Specification statewide	All	1/01/15	1/02/15	1	



Schedule to be continuously updated per Pilot Project roll-out dates and project progress.

Use of Recycled Concrete Materials

Sub Task Group (STG): Materials & QA **Priority: 4**

STG Co-Chair: Keith Hoffman **Project Team Lead: Mike Donovan, Don Vivant**

Project Team Members: Charley Rea, Craig Hennings, Deepak Maskey, Keith Hoffman, Jinesh Mehta, Pat Imhoff, Tarek Khan, Mike Serra, Robert Graine, Paul Fayer, Ruth Fernandes, Jim Cotey Basil Miranda, Steven Cook

Project Team Advisors: TBD

DEADLINE: 7/31/2014 **PERCENT COMPLETE: 90 %**

OBJECTIVES:
By using various appropriate measures and devising clear limitations and practices, activity will examine returned concrete for use as minor (non-structural) concrete without compromising life cycle.

Currently, Caltrans specifications allow *aggregate* from plastic or hardened concrete to be used in road base and in various appropriate applications in new concrete. However, the use is not widely seen and therefore requirements should be evaluated and modified to promote more use for specified applications without compromising life cycle.

ANTICIPATED SPEC-WRITER INVOLVEMENT:
Once the objective is clearly defined and necessary background research is performed, project team will work on coming up with recommended changes. It is likely that Specification involvement will include reviewing the draft Recycled Concrete Section 90 subsection.

RECENT ACTIVITIES:

- Draft MPQP was circulated to industry for review and comment on 6/6/2014.
- Project team met with Climate Earth and Industry to discuss carbon footprint savings for returned plastic concrete on June 4, 2013.
- A field trip was scheduled on September 11, 2013 to observe manufacturing of recycle concrete operations.
- Industry met with Division of Weights and Measures on January 31, 2014 to discuss the MPQP process and understand their concerns.
- Project team meeting took place on April 3, 2014. A subgroup was formed for Caltrans and Industry to work on the enhanced MPQP development.

UPCOMING ACTIVITIES:

- Monthly project team meetings to continue.
- Next scheduled meeting is on July 10, 2014.
- Internal meeting regarding the Specification changes is scheduled for May 16, 2014.
- Discuss the Section 90 changes related to cement backfill material specification language with the Spec Owners.
- The carbon footprint savings report was received by project team on June 21, 2013.
- Draft Specs to be complete in coming weeks.

SCHEDULE AND PROGRESS:
Current target completion date is July 2014.

CIP Concrete Pavement Sub-Task Group: Issue Status Summary, July 2014

Priority	Project	Purpose	Overall Progress	Target Completion Date	% Complete
1	Coefficient of Thermal Expansion (CoTE)	To CoTE as a criteria for design and construction of concrete pavements.	Received 278 total test results to date from 20 projects using six labs.	12/30/2013	99%
2	Roller Compacted Concrete	Develop standard provisions for the use of Roller Compacted Concrete	Draft special provisions are ready for implementing on trial project. Incorporated into one project in District 7.	12/30/2013	100%
3	Flexural Beam Testing in accordance with ASTM (Joint Activity with Materials/QA STG)	Industry requesting update of ASTM/CTM requirements related to Flexural Test specimen curing, testing, etc.	Scoping document approved.	6/30/2015	N/A

Precast Concrete Sub-Task Group: Issue Status Summary, July 2014					
Project Priority	**Project**	**Purpose**	**Overall Progress**	**Target Completion Date**	**% Complete**
1	Precast Pavement Specification Development	Develop comprehensive departmental guidance or standard approach on the use of precast concrete pavement.	Finalize plans and specifications. Work to bring the activity to a close.	12/31/2013	99%
2	Prestressing Jack Equipment calibration	Updating this specification will provide clear guidelines in the specifications consistent with current practice. Removing the requirement to ship large sensitive equipment to Sacramento for calibration will assure accurate calibrations and will eliminate unnecessary costs to both Caltrans and Industry. Reviewing and updating equipment requirements will assure that the specifications are consistent with modern technology while maintaining the desired accuracy.	Scoping Document approved.	6/30/2015	N/A

Precast Pavement Specification Development

Sub Task Group (STG): Precast

Priority: 1

STG Co-Chair: Keith Hoffman

Project Team Lead: Mehdi Parvini

Project Team Members: Doug Mooradian, Ruth Fernandes, Jim Ma, Jim Cotey, Tinu Mishra, Kirsten Stahl, Debbie Wong, Jonathan den Hartog, Shiraz Tayabaji, Tracy Vacura, Dave Merritt, John Grafton, Ziad Sakkal, Bobby Petska, Steve Healow, Sharon Hansen

Project Team Advisors: N/A

DEADLINE: 12/31/2013

PERCENT COMPLETE: 99%

OBJECTIVES:
Precast concrete pavement systems were developed as an alternative for fast-setting cements or asphalt pavement systems in cases where a highway closure for longer than six hours is not a viable option. These systems are also beneficial in cases where high concrete durability and long pavement life are desired.

Although a few precast concrete pavement projects have already been built throughout the state, there is no comprehensive departmental guidance or standard approach on the use of precast concrete pavement.

ANTICIPATED SPEC-WRITER INVOLVEMENT:
Some involvement needed in final review of SSPs and in compiling input from various stakeholders.

RECENT ACTIVITIES:
There were several items in the draft specifications that were under dispute. The Subtask Group drafted position papers to submit to the Task Group for consideration. The RCP operating principles and dispute resolution process were followed. All disputes have all been resolved.

UPCOMING ACTIVITIES:
For the next month:

- Finalize plans and specifications. Work to bring the activity to a close.

For the next two months:

- Lessons Learned documents will continue to be captured throughout Fall of 2014 for all ongoing Precast Pavement projects.

Rock Products Committee
SCOPING DOCUMENT
Shotcrete Specification Requirements
July 1, 2014

Task Group

Concrete Task Group

Problem Process

☒ Annual
☐ Expedited
☐ Emerging Initiative

Title

Shotcrete Specification Requirements in Section 53

Issue/Problem Statement

The 2006 and 2010 Standard Specifications (updates to section 90) have had an unforeseen impact on the quality of shotcrete that Contractors are able to provide, while still meeting the specification requirements.

Background

The current Section 53 specification and Section 90 have two different grading requirements for the 3/8" pea gravel. This has caused issues related to the interpretation of aggregate grading requirements in certain projects.

In addition, when shotcrete is designed per *Section 90-1.02* and Equations 1 and 2, there have been several issues related to the placement of the shotcrete including cracking and loss of adhesion. Higher volumes of SCMs tend to result in the lack of early adhesion which leads to tension cracks, which may or may not be discovered at time of placement. (Example of issue came up on project 04-264144). These issues are magnified when compressive strengths of 4,000 psi or higher are required.

Water demand for shotcrete mixes can be higher than what is currently allowed in Section 90. This is because shotcrete has a higher specific surface area due to the finer aggregate grading requirements. This has caused delays in obtaining an approved mix design that can be placed without creating other quality problems.

In addition, Industry has moved towards the use of automatic color dispensing systems which may deviate from the current specification. Industry would like to consider the use of these alternative systems.

Purpose

To revise Section 53 to reflect the 3/8" grading requirements found in Section 90 in order to eliminate conflicting grading requirements. There is confusion as to whether the combined

grading requirements in Section 90 apply to Section 53 for shotcrete, which include provisions that state: "The 3/8" combined grading requirements in Section 90 do not apply."

The activity would determine the need for Equation 2 for shotcrete as written, while keeping the intent of the original specification with regard to ASR and other Department goals. This could include using alternatives currently allowed for precast and pavement mixes (or a combination of the two).

Determine the need for the requirement on maximum water allowed per section 90-1.02G(6) based on proposed above changes and standard industry practices.

Consider the use of allowing alternative coloring systems for Shotcrete in the specifications.

Objectives/Deliverables

This objective of this activity is to provide clarity to the shotcrete specifications in Section 53 of the Standard Specifications.

The following deliverables will be accomplished as part of this activity:

1. Identify team of stakeholders with equal representation from Caltrans and Industry.
2. Review shotcrete specification, best practices and field construction issues. (Some examples included)
3. Identify the Department's parameters and performance criteria for a quality shotcrete specification and propose an alternative specification that meets the same expectations.
4. New proposed Section 53 Standard Specifications and SSPs where necessary.
5. Identify resource impacts, if any, from proposed changes.
6. Outreach with various stakeholders to communicate proposed updates prior to routing to mandatory stakeholders.

Timeline

Deliverable	**Estimated Start Date**
Identify team of stakeholders with equal representation from Caltrans and Industry.	1 July 2014

Deliverable	**Estimated Start Date**
Review shotcrete specification and field construction issues.	1 August 2014
Identify the Department's parameters and performance criteria for a quality shotcrete specification and propose an alternative specification that meets the same expectations.	1 October 2014
New proposed Specifications/SSPs where necessary.	1 January 2015
Identify resource impacts, if any, from proposed changes.	1 February 2015
Outreach with various stakeholders to communicate proposed updates prior to routing to mandatory stakeholders.	1 March 2015
Route to mandatory stakeholders for final review and approval	1 April 2015

Benefits

Provide more confidence that the final in-place product is free of coarse separations and defects.

Better clarity for mix design requirements would result in more cost effective shotcrete.

This activity would result in Industry being able to provide mixes that are consistent with the shotcrete industry's common practices, thus giving Caltrans a better product.

Resource Requirements

Unit/Organization:

DES METS:	0.10 PY
Construction:	0.10 PY
DES OSC	0.10 PY
District:	0.05 PY
OE/SP&I	0.05 PY
FHWA:	0.05 PY
Legal	0.05 PY

Impediments to Completion of Deliverables

1- Lack of coordination and contribution of sub task group members
2- Lack of human and material resources
3- Lack of support by managers, functional units, and staff

Recommendation and Approval

This scoping document for the Shotcrete Specification Requirements was prepared by Concrete Task Group to address a priority issue that has Statewide significance and is within the Rock Products Committee mission. The Task Group Co-Chairs have determined the scope, resources required and timeline for delivery of this project to ensure that the deliverables are achievable in a timely manner.

Scoping Document Recommended for Approval by:

Dan Speer
Concrete Task Group Co-Chair

Chuck Suszko
Concrete Task Group Co-Chair

Nick Burmas
Concrete Task Group Co-Chair

Scoping Document Approved by:

Amarjeet Bentpal
Caltrans RPC Co-Chair

Phil Stolarski
Caltrans RPC Co-Chair

John Stayton
Caltrans RPC Co-Chair

Approval Date: 6/23/14

Rock Products Committee
SCOPING DOCUMENT
Flexural Beam Testing Requirements
July 1, 2014

Task Group

Concrete Task Group

Problem Process

☒ Annual
☐ Expedited
☐ Emerging Initiative

Title

Flexural Beam Testing Requirements in Section 40

Issue/Problem Statement

Industry is concerned that the acceptance criteria for their product is based on factors out of their control, such as ambient temperature, weather conditions, specimen fabrication, transportation and storage.

Industry believes that California Test 523 certification and accreditation for third party labs and non- Caltrans personnel has been, and continues to be, inconsistently managed and enforced throughout the State.

Background

The earliest research on California's testing method for flexural strength (later to be named California Test 523 [CT 523]) appeared in a report published in January 1967. Caltrans sought to improve upon the ASTM C78 that was already in place. The main focus of Caltrans' experimentation was to see if smaller test samples could be used and still provide accurate, reliable results. ASTM later followed Caltrans' lead and also allowed for smaller test sample sizes. At the time CT 523 was developed it was determined that this was the best method to determine the strength of in-place concrete pavement before opening the roadway to traffic.

Most other states use either AASHTO or ASTM test methods. These test methods are commonly accredited and certified by AASHTO and ACI. These test methods are supported by national organizations that keep the test methods current and up to date. New Department policy is to start moving towards national standards where national test is the same as the California Test method.

Industry feels that the ASTM C31 and ASTM C78 test methods would be better methods for determining acceptance of concrete used for pavement due to the fact that it minimizes variables in curing, fabrication and storage of test specimens that are inherent to CT 523.

CT 523 only allows rodding of test specimens because at the time it was written, rodding was the only option as field electric generators and vibratory equipment was not readily available. Industry believes that rodding is not adequate for consolidation of low-slump concrete paving mixes. The current AASHTO and ASTM test methods allows for vibration of low-slump concrete pavement specimens.

Purpose

To come to an agreement as to which of the test methods previously identified will satisfy both Caltrans and industry with regard to acceptance testing.

Identify current practices throughout the state in regards to CT 523 management and certification for all technicians performing these tests and the accreditation of Caltrans and third party testing laboratories.

Objectives/Deliverables

This objective of this activity is to provide additional clarity to the flexural strength testing requirements found in the Standard Specification.

1) Summarize current practices within Caltrans and other State DOTs (including testing, staff certification, lab certification, certification frequency, what accreditations are the labs obtaining, etc). Summary of current guidelines within Caltrans (and other State DOTs) including the IA Manual and Construction Manual.

2) Perform literature search for:
   a) Factors influencing performance of CT 523/ASTMs/Other State DOT Test methods.
   b) Any available data supporting the development or subsequent research related to CT 523 and similar ASTM test methods. (Documents pertaining to CT 523 should be located in Caltrans files and/or archived records.)
   c) Details relating to the basis for the standard specification change, specifically Section 40. Section 40 of the standard specifications went from allowing 16% variance between two specimens to16% variance from the average of two specimens.

3) Prepare decision document that analyzes possible impacts to the Department and Industry (economic, logistical, etc.) Examples: Equipment, training, manual updates, design impacts, contract administration and specification updates. Analyze impacts:
   a) If the recommendation is made to switch to ASTM.
   b) If the recommendation is made to stay with CT 523.

4) Based on the decision document, gain consensus amongst the team to provide a recommendation to the Concrete Task Group as to which method is best. If a test method cannot be recommended, recommend a path forward. If a test method can be recommended, modify the specifications accordingly.

Timeline/Resources

Deliverable	**Anticipated Completion**
Summarize current practices within Caltrans and other State DOTs (including testing, staff certification, lab certification, certification frequency, what accreditations are the labs obtaining, etc.) Summary of current guidelines within Caltrans (and other State DOTs) including the IA Manual and Construction Manual.	October 1, 2014
Summary of investigation of factors influencing performance of CT 523/ASTMs/Other State DOT Test methods.	November 3, 2014
Summary of any available data supporting the development or subsequent research related to CT 523 and similar ASTM test methods.	December 5, 2014
Explanation of details relating to the basis for the standard specification change, specifically Section 40.	December 23, 2014
Prepare decision document weighing pros and cons of making switch.	March 31, 2015
Provide written recommendation if possible. If recommendation on test method cannot be made, recommend a path forward.	June 30, 2015

Team Members

Team listed below represents that there will be 12 voting members and no more.

	CIP Pavement Subtask Group	Materials/QA Subtask Group
Caltrans Team Members:	Cornelis Hakim (Team Leader)	Keith Hoffman
	Mehdi Parvini / OE**	Jim Sagar
	Doran Glauz	Ken Darby
Industry Team Members:	Bruce Carter	Mark Hill
	George Butorvich	Marc Robert
	Tom Carter	Robert Hightower

** Represents one individual at any given time. If specifications need revising, replace Mehdi Parvini with someone from OE.

Team will be guided by Standard Project Workplan and Rock Products Charter.

Benefits

Relieves Industry's concern that the acceptance criteria for their product is based on factors out of their control, such as ambient temperature, weather conditions, specimen fabrication, transportation and storage.

If switch is made, certification and accreditation for third party labs and non-Caltrans personnel will be consistently managed and enforced throughout the State by using accepted ACI certification.

Has potential to reduce disputes on projects with regard to flexural strength testing method, therefore reducing litigation costs.

If switch is made, will eliminate the resources needed to update and maintain CT 523.

Will also know if improvements could be made to current practices within Caltrans.

Will gain knowledge on how or if the CT 523 can be improved.

Possible Impacts

If switch is made to ASTMs:

- Specifications, with the concurrence of all mandatory stakeholders, would have to be changed.
- Acceptance for opening to traffic will be determined by testing field cured samples.

Acceptance for
28 day strength (or more) will be determined by testing standard cured samples.

- Raising the specified flexural strength value to 625 psi for 28 days (standard-cured samples), 600 psi for 10 days (field-cured samples) and revise the specification that requires "pavement temperature (be kept) at not less than 40 degrees F for the initial 72 hours" to 50 degrees F in accordance with ACI
  306.
- IA would need to begin certifying to ASTM instead of CT 523.
- May eliminate field laboratories.

If we stay with CT 523:

- Status quo is maintained.
- Better understanding from Industry on why CT 523 is used.

Resource Requirements

Caltrans:

Pavement:	0.25 PY
DES METS:	0.10 PY
Construction:	0.10 PY
District:	0.02 PY
OE	0.02 PY
Legal	0.02 PY

Other:

Industry:	0.50 PY
FHWA:	0.05 PY

Impediments to Completion of Deliverables

1. Lack of coordination and contribution of task group members
2. Lack of human and material resources
3. Lack of support by managers, functional units, and staff
4. Lack of staff to provide adequate training for implementation
5. New procedures may require more resources and time to complete. If this is the case, need to document conclusions in a report and propose a new Scoping Document with an updated resource estimate.

Recommendation and Approval

This scoping document for Flexural Beam Testing Requirements was prepared by the Concrete Task Group to address a priority issue that has Statewide significance and is within the Rock Products Committee mission. The Task Group Co-Chairs have determined the scope, resources required and timeline for delivery of this project to ensure that the deliverables are achievable in a timely manner.

Scoping Document Recommended for Approval by:

Dan Speer
Concrete Task Group Co-Chair

Chuck Suszko
Concrete Task Group Co-Chair

Nick Burmas
Concrete Task Group Co-Chair

Scoping Document Approved by:

Amarjeet Benipal
Caltrans RPC Co-Chair

Phil Stolarski
Caltrans RPC Co-Chair

John Stayton
Caltrans RPC Co-Chair

Approval Date: 6/23/14

Rock Products Committee
SCOPING DOCUMENT
Precast Stress Jack Requirements
July 1, 2014

Task Group

Concrete Task Group

Problem Process

☒ Annual
☐ Expedited
☐ Emerging Initiative

Title

Update Precast Stress Jack Requirements in Specifications

Issue/Problem Statement

1. Specifications are inconsistent with current Caltrans and Industry practice for calibrating stressing equipment used in Precast concrete manufacturing plants.
2. Equipment requirements are inconsistent with current equipment produced for use in Precast concrete manufacturing plants.

Background

Current specifications require that each jack used to tension prestressing steel permanently anchored at 25 percent or more of its specified minimum ultimate tensile strength must be calibrated by METS within 1 year of use and after each repair. However, this specified procedure causes unnecessary resource impact to the Department due to the following reasons:

- Shipping of pretensioning jacks to the Department's Translab takes system out of commission for an extended period of time.
- Shipping of pretensioning jack system back to the precast facility could result in increased risk of calibration errors while in transit.
- Quality control inspection and Department verification of elongation at precast facilities has been effective in preventing issues related to calibration.
- There would be much ambiguity for Transportation Agencies performing quality assurance while using this current Department specification for projects on the State Highway System.

Per Department Memorandums from November 1999 and May 2000, current practice allows third party calibration of stressing equipment with Caltrans observation. Current equipment requirements in the specification also need to be reviewed and updated to be consistent with current technology.

Purpose

Updating this specification will provide clear guidelines in the specifications consistent with current practice. Removing the requirement for METS calibration of jack equipment will help ensure accurate calibrations and will eliminate unnecessary costs to both Caltrans and Industry. Reviewing and updating equipment requirements, including digital and jack-integrated gauges, will assure that the specifications are consistent with modern technology while maintaining the desired accuracy.

Objectives/Deliverables

The objective is to update the specifications to be consistent with current best practice, while assuring that the stressing equipment used in Precast concrete manufacturing plants will provide the necessary accuracy to produce quality products that meet finished product design requirements.

The deliverables for this activity are as follows:

- Review existing specifications and best practices to assure that the proposed change will provide the necessary accuracy to assure quality products are produced that meet product design requirements.
- Revise specification Section 50-1.01D(3) Equipment and Calibration. Gather and compile feedback from all necessary parties.
- Advise on the applicability of these specifications to post tensioning jack calibration.
- Finalize the specifications and publish

Timeline

Gather information regarding equipment currently in use	1 September 2014
Draft specification updates	1 December 2014
Gather and compile feedback and responses	1 February 2015
Finalize specification and route for Stakeholder approval	1 April 2015
Publish specification updates	30 June 2015

Benefits

The change to the specification will remove unnecessary specification requirements while providing the required Precast product quality for PC PS concrete products produced in a Precast concrete manufacturing plant.

Impacts

This proposal will reduce impacts to policy, specifications, and practices. This will benefit all stakeholders including Industry by avoiding costly and possibly unnecessary requirements for fabricating PC PS concrete products.

Stakeholders:

- Division of Construction
- Division of Design
- DES – METS
- DES – Structure Design
- DES – Structure Policy and Innovation
- Office Engineer
- Maintenance/ Pavement Program
- Industry
- FHWA (High-profile project change orders with altered language or that require time extensions will need FHWA approval)

Resource Requirements

Caltrans:

DES METS:	0.10 PY
Construction:	0.10 PY
District:	0.10 PY
OE	0.10 PY
Industry:	0.15 PY
FHWA:	0.05 PY
Legal	0.05 PY

Impediments to Completion of Deliverables

None expected

Recommendation and Approval

This scoping document to Update Precast Stress Jack Requirements in Specifications was prepared by Concrete Task Group to address a priority issue that has Statewide significance and is within the Rock Products Committee mission. The Task Group Co-Chairs have determined the scope, resources required and timeline for delivery of this project to ensure that the deliverables are achievable in a timely manner.

Scoping Document Recommended for Approval by:

Dan Speer
Caltrans Task Group Co-Chair

Chuck Suszko
Caltrans Task Group Co-Chair

Nick Burmas
Caltrans Task Group Co-Chair

Scoping Document Approved by:

Amarjeet Benipal
Caltrans RPC Co-Chair

Phil Stolarski
Caltrans RPC Co-Chair

John Stayton
Caltrans RPC Co-Chair

Approval Date: 6/23/14